

18. (Amended) An automotive internal trim panel into which the nonwoven fabric-laminate according to claim 9 is shaped.

### REMARKS

Reconsideration of this application is requested. The title has been amended. The specification has been amended to correct typographical errors. Claims 1-18 have been amended to refer to a "fabric-laminate" rather than a "fabrics-laminate" and to specify that the average tensile strengths in claim 1 are of the merely-entangled nonwoven fabric. Applicant respectfully submits that the amendment to claims 1-18 does not narrow their scope. No new matter has been added. Claims 1-18 are pending and at issue.

The specification has been amended to correct the units for area density. In particular, on page 12, line 6, the range "40 to 400 g/cm<sup>2</sup>" has been amended to recite "40 to 400 g/m<sup>2</sup>", and the range "50 to 300 g/cm<sup>2</sup>" has been amended to recite "50 to 300 g/m<sup>2</sup>". On page 16, lines 16 to 17, the range "50 to 1000 g/cm<sup>2</sup>" has been amended to "50 to 1000 g/m<sup>2</sup>" and the phrase "100 to 900 g/cm<sup>2</sup>" has been amended to "100 to 900 g/m<sup>2</sup>". On page 20, lines 22-23, the range "30 to 300 g/cm<sup>2</sup>" has been amended to "30 to 300g/m<sup>2</sup>" and "50 to 200 g/cm<sup>2</sup>" has been amended to "50 to 200 g/m<sup>2</sup>". Support for these amendments is found at, for example, Example 1 on page 24, lines 5 and 16-17, of the specification.

The specification has been objected to because the pages allegedly are not numbered. According to the applicant's records, the pages of the specification do have page numbers. In order to expedite prosecution, applicant has submitted herewith a substitute specification with numbered pages.

Claims 1-18 have been objected to for including the phrase "fabrics-laminate". Claims 1-18 have been amended to recite "fabric-laminate" rather than "fabrics-laminate" as suggested by the Examiner.

Claims 1-17 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicant respectfully traverses this rejection.

The Examiner asserts that claim 1 is indefinite because it is unclear as to what the phrase "an average of a longitudinal tensile strength" in claim 1 is referring. Claim 1 has been amended to clarify that the average of the longitudinal tensile strength and the transverse tensile strength refers to the merely-entangled nonwoven fabric.

The Examiner also asserts that claims 5 and 6 are indefinite because they appear to refer to the "rigid layer" by two different names. Claim 5 has been amended to clarify that the rigid layer contains thermally fusible fibers. These fibers are fused with the entanglement-based nonwoven fabric of the rigid layer. Claim 6 has been amended to clarify that the bulky layer contains thermally fusible fibers. These fibers are fused with the bulky nonwoven fabric of the bulky layer.

The Examiner asserts that the term "profile fibers", which appears in claim 7, is not defined in the specification. Contrary to the Examiner's assertion, this term is defined at page 10, lines 20-24, of the specification. The term "profile fibers" means a fiber having a non-circular cross-section.

For the foregoing reasons, applicants believe this rejection has been overcome and accordingly, applicants respectfully request withdrawal of this rejection.

Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being obvious over Nemoto et al. (U.S. Patent No. 6,102,465) in view of Nagata et al. (U.S. Patent No. 6,312,542). Applicants respectfully traverse this rejection.

The nonwoven fabric-laminate of the present invention includes an entanglement-based nonwoven fabric in a rigid layer. The entanglement-based nonwoven fabric is derived from merely-entangled nonwoven fabric having average longitudinal and transverse tensile strengths of at least 150 N/50 mm width. As shown in Table 1 on page 28 of the specification, a nonwoven fabric-laminate exhibits superior rigidity when the merely-entangled fabric has an average tensile strength of at least 150 N/50 mm width. For example, a fabric-laminate derived from merely-entangled fibers having an average tensile strength of 120 N/50 mm width exhibited a falling distance about 50% greater than that of a fabric-laminate derived from merely-entangled fibers having an average tensile strength of 180 N/50 mm width. The cited references do not disclose or suggest that the rigidity of a fabric laminate may be

significantly improved by including a merely-entangled nonwoven fabric having an average tensile strength of at least 150 N/50 mm width.

Nemoto discloses a conventional floor carpet for an automotive vehicle. The floor carpet comprises two sound absorbing materials, i.e., sound absorbing materials (12) and (13).

Nagata discloses a fibrous acoustical material for reducing noise transmission.

Neither Nemoto nor Nagata disclose the tensile strength of the materials described therein.


As noted above, Nemoto and Nagata are concerned with the sound absorption properties of the materials described therein, not their rigidity. When the tensile strength of a merely-entangled nonwoven fabric is high, such as in the presently claimed invention, the fibers in the fabric have a high degree of entanglement (see page 4, lines 7-10 of the specification). Since the fibers have a high degree of entanglement, they have a low degree of freedom, and, therefore, have poor sound absorption. Consequently, one of ordinary skill in the art would not have the motivation to include a merely-entangled nonwoven fabric having a high tensile strength in the sound absorption materials disclosed in Nemoto and Nagata.

For the foregoing reasons, the cited references do not render obvious the presently claimed invention. Accordingly, applicant respectfully requests withdrawal of this rejection.

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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PATENT TRADEMARK OFFICE

Docket No: 3725/OJ203

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Akira Utsumi

Serial No.: 09/460,361

Art Unit: 1771

Confirmation No.: 2392

Filed: 12/13/99

Examiner: C. Pratt

For: **NONWOVEN FABRICS-LAMINATE, AND AN AUTOMOTIVE INTERNAL TRIM PANEL**

RECEIVED  
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MARK-UP FOR AMENDMENT PURSUANT TO 37 C.F.R. § 1.121

Hon. Commissioner of  
Patents and Trademarks  
Washington, DC 20231

June 3, 2002

IN THE TITLE:

NONWOVEN FABRIC-LAMINATE, AND AN AUTOMOTIVE INTERNAL TRIM PANEL

IN THE SPECIFICATION:

Page 12, lines 3-17:

An area density of the entanglement-based nonwoven fabric, such as the merely-entangled nonwoven fabric or the fused-entangled nonwoven fabric, for the rigid layer is preferably about 40 to 400 g/[c]m<sup>2</sup>, more preferably about 50 to 300 g/[c]m<sup>2</sup>, to ensure the required rigidity and weight-lightening. A thickness of the rigid layer may be about 0.3 to 3 mm, but is preferably about 0.5 to 2 mm, more preferably about 0.6 to 2 mm, most preferably about 0.8 to 2 mm. When the thickness of the rigid layer is 0.8 mm or more, nonwoven fabrics-laminate having an excellent rigidity may be produced. The constituent fibers of the entanglement-based nonwoven fabric, such as the merely-entangled nonwoven fabric or the fused-entangled nonwoven fabric, for the rigid layer are preferably short fibers having a length of about 20 to 160 mm, as these have a high degree of freedom, and thus show an excellent formability.

Page 16, lines 15-23:

An area density of the bulky layer of the bulky nonwoven fabric is preferably about 50 to 1000 g/[c]m<sup>2</sup>, more preferably about 100 to 900 g/[c]m<sup>2</sup>, to ensure the required form stability and weight-lightening. A thickness of the bulky layer may be about 2 to 50 mm, but is preferably about 3 to 30 mm. The constituent fibers of the bulky nonwoven fabric for the bulky layer are preferably

short fibers having a length of about 20 to 160 mm, because they have a high degree of freedom, and thus an excellent formability.

Page 20, lines 21-28:

An area density of the surface nonwoven fabric, i.e., the surface layer, is preferably about 30 to 300 g/[c]m<sup>2</sup>, more preferably about 50 to 200 g/[c]m<sup>2</sup>, and a thickness thereof is preferably about 0.5 to 10 mm, more preferably about 1 to 5 mm. The constituent fibers of the surface nonwoven fabric, i.e., the surface layer, are preferably short fibers having a length of about 20 to 160 mm, as they have a high degree of freedom and thus an excellent formability.

**IN THE CLAIMS:**

1. (Amended) A nonwoven [fabrics-laminate] fabric-laminate comprising:  
(A) a rigid layer of an entanglement-based nonwoven fabric; and  
(B) a bulky layer of a bulky nonwoven fabric having an apparent density lower than that of said rigid layer[;],  
wherein the entanglement-based non-woven fabric is derived from merely-entangled nonwoven fabric, [an] the average of [a] the longitudinal tensile strength and [a] the transverse tensile strength of [a] the merely-entangled nonwoven fabric [from which said entanglement-based nonwoven fabric is derived] being not less than 150 N/50 mm width.



2. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein an apparent density of said rigid layer is less than 0.15 g/cm<sup>3</sup>.

3. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein a thickness of said rigid layer is 0.8 mm or more.

4. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein a difference between the apparent density of said rigid layer and the apparent density of said bulky layer is not more than 0.14 g/cm<sup>3</sup>.

5. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein said rigid layer contains thermally-fusible fibers, and said entanglement-based nonwoven fabric in said rigid layer is fused with said thermally-fusible fibers.

6. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein said bulky layer contains thermally-fusible fibers, and said bulky nonwoven fabric in said bulky layer is fused with said thermally-fusible fibers.

7. (Amended) The nonwoven [fabrics-laminate] fabric-laminate

according to claim 1, wherein said rigid layer and/or said bulky layer contain profile fibers and/or hollow fibers.

8. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, wherein substantially all constituent fibers of said rigid layer are polyester fibers, and substantially all constituent fibers of said bulky layer are polyester fibers.

9. (Amended) The nonwoven [fabrics-laminate] fabric-laminate according to claim 1, further comprising a laminated surface layer.

10. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 1 is shaped.

11. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 2 is shaped.

12. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 3 is shaped.

13. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 4 is shaped.

14. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 5, is shaped.

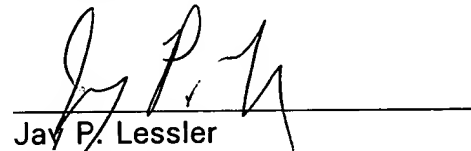
15. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 6 is shaped.

16. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 7 is shaped.

17. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 8 is shaped.

18. (Amended) An automotive internal trim panel into which the nonwoven [fabrics-laminate] fabric-laminate according to claim 9 is shaped.

Respectfully submitted,



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